NPS Field Experimentation 18-3

JIFX
Joint Interagency Field Experimentation

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The Naval Postgraduate School is proud to celebrate the 15th year of Field Experimentation. The FX program exists to provide an opportunity for NPS faculty and students to engage with industry, academia and the warfighter in a field environment. It also provides the opportunity for these institutions to learn, through experimentation with emerging technologies, the way forward to apply these technologies to national security challenges.

Joint Interagency Field Experimentation (JIFX) 18-3 hosted 23 experiments at the Naval Postgraduate School's Field Laboratory at McMillan Airfield, Camp Roberts. Over 280 researchers and developers from 85 unique government, private, and academic organization participate in this event, that included a focus on larger (group 2 & 3) unmanned air systems to provide persistent multi-purpose support to military, disaster response and humanitarian operations.

The event also expanded the emphasis on cyber security for emerging technologies with "good cyber hygiene" being emphasized in all experimentation efforts.

Participating Organizations

Experiments at 18-3

Swift Engineering	A-01: VTOL Fixed-Wing UAS – HA/DR Situational Awareness Mission
Martin UAV	A-04: V-BAT UAS Multi-Ground Control Station
Naval Postgraduate School	A-07: Multi-Function UAV Swarming A-25: Inexpensive Hand Launched Swarm Entity A-26: Next Generation Zephyr Swarm Entity A-27: NPS Designed Quadcopter Swarm Entity
Arcturus UAV	A-08: T-20 JUMP
Precision	A-09: Flexrotor Long Endurance
Elroy Air	A-10: VTOL Air Cargo Logistics System – Sub-Scale Mission Execution A-13: VTOL Air Cargo Logistics System – Autonomous Ground Control
The Sky Guys	A-14: Vanguard VTOL Tactical UAS Software-in-the-Loop
L3 & Latitude Engineering	A-16: Fixed Wing VTOL Rotator Mesh Network Operations
Carnegie Mellon University	A-17: UAS Learning through Autonomous Curiosity F-01: LongShoT: Long Range Synchronization of Time
Kraus Aerospace	A-19: UAS with Thermal Soaring and Cooperative Swarming Capabilities A-20: High Altitude, Non-Stop (long endurance) Airborne Capabilities H-02: Predictive Autonomous Intelligence
Platform Aerospace	A-23: Ultra-Long Endurance Flight
SSC Pacific	A-24: UAS Payload Testing
Spectranetix	B-01: RF Unmanned/Autonomous Systems Detection
Fortem Technologies	B-02: Counter-UAS Drone Pursuit and Capture Day/Night
Naval Research Laboratory	I-01: Low-Cost UAV Swarming Technology (LOCUST)
Orion Labs	J-02: Advanced Voice Platform Application Flexibility

Participant Perspectives

Fortem Technologies *successful tested the full kill chain for small drones in different environments. We set up at the air strip and on a rooftop of the mock village. Using our TrueView radar as a ground sensor, we deployed two DroneHunters, to intercept two hostile drones. After a short pursue, both DroneHunters captured each hostile drone via net and dropped them off at a designated location. The DroneHunters were deployed, pursued, and fired autonomously using only queues from the DroneHunter Ground Control.*

JIFX was an amazing event for the ***Kraus Aerospace*** *team, full of immense success, some tears and failures that helped us achieve further success. The support, collaboration and immense effort put on by the NPS team was what made this event especially stand out for us and contribute towards our success. We were successful at testing our persistent, long endurance capabilities for a hand-launched Group-1 UAV by utilizing our new codebase using Linear Quadratic Estimations for thermal hunting & thermal soaring.*

Participation Numbers

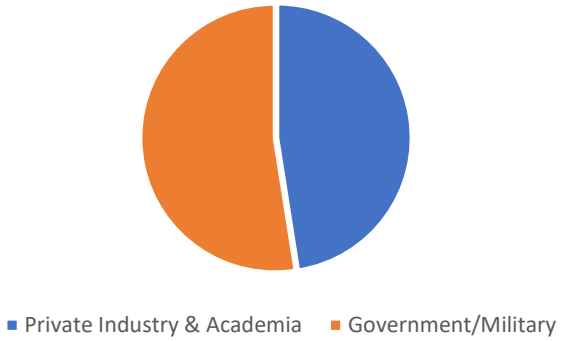
23 Total Experiments

280 Participants from 85 Unique Organizations

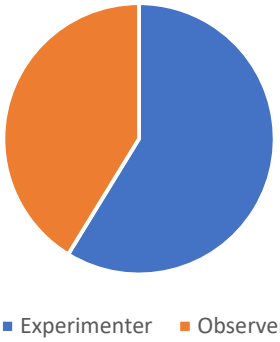
Subject Matter Expert Observers

Australian Special Operations Command, Canadian Special Operations Forces Command, Defense Technical Information Center (DTIC), Department of Energy, Fort Ord Reuse Authority, Joint Vulnerability Assessment Branch, Ministry of Defence United Kingdom, Montana State University Miltech, Naval Air Systems Command (NAVAIR), Naval Postgraduate School, Naval Research Laboratory (NRL), Naval Sea Systems Command (NAVSEA), National Guard Bureau, North American Aerospace Defense Command, Naval Special Warfare, Naval Ship Research & Development Center, Office of Naval Research (ONR), Space and Naval Warfare System Center Pacific (SSC-Pacific), Office of the Secretary of Defense Policy, Santa Clara Valley Water District, US Special Operations Command (USSOCOM), US Army Special Operations Command (USASOC), US Central Command (USCENTCOM), US Special Operations Command (USSOCOM), US Transportation Command (TRANSCOM), US Northern Command (USNORTHCOM)

Participation by Organization



Participation by Role



Upcoming JIFX Events

Event	Dates	Location
JIFX 18-4	6 – 10 August 2018	Camp Roberts, CA

Visit www.nps.edu/fx to propose an experiment or register to attend